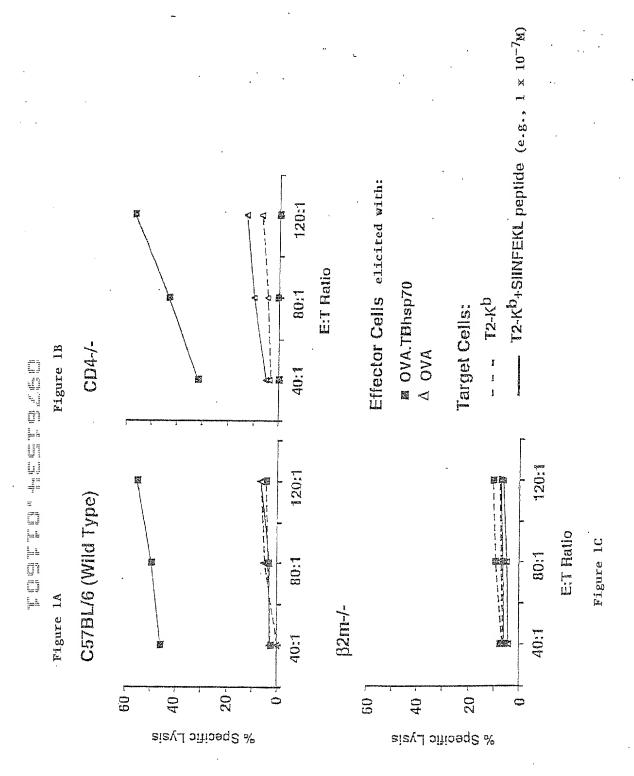
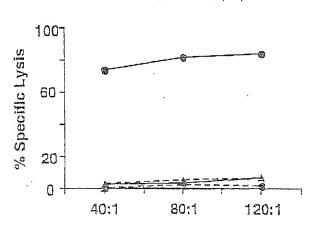
Docket/App No.: 0399.2006-003
"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4⁺ T Cell-Independent"
Inventors Quan Huang, et al



"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4⁺ T Cell-Independent" Inventors Qian Huang, et al.

C57BL/6 (Wild Type)





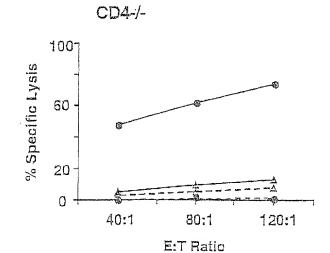


Figure 2B

Effector Cells Target Cells:

elicited with:
OVA.mhsp70 -- T2-Kb

T2-Kb+SIINFEKL

Hsp70 Domains

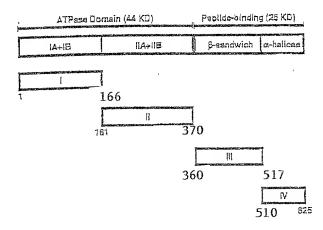


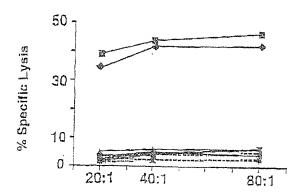
Figure 3

Docket/App No.: 0399.2006-003

"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4⁺ T Cell-Independent"

Inventors: Qian Huang, et al.





Effector Cells elicited with:

Target Cells:

T2-Kb

OVA.TEhsp | OVA.TBhsp II

- T2-Kb+SIINFEKL

OVA.TEhsp70 III

+ OVA.TEhsp70 IV

A OVA

Figure 4

Docket/App No.: 0399.2006-003
"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4* T Cell-Independent"

Inventors Qian Huang, et al.

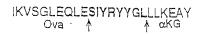


Figure 5A

Hsp65

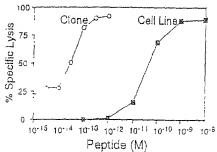
Figure 5B

Vector P1

Figure 5C

hsp65-P1 Vector CD69

Figure 5D





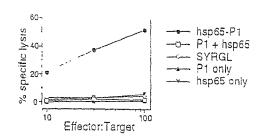


Figure 6B

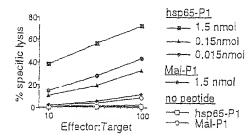
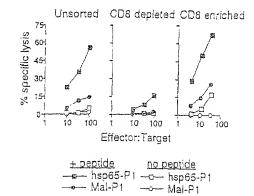
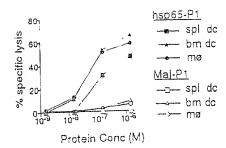


Figure 6C



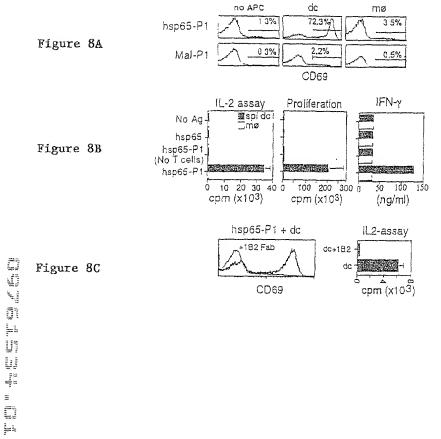


He after the free of the first of the first of the

Figure 7

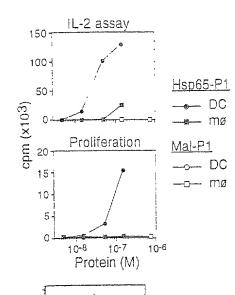
Docket/App No.: 0399.2006-003
"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4+ T Cell-Independent"

Inventors: Qian Huang, et al.



Inventors Qian Huang, et al.







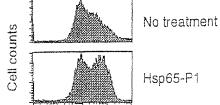
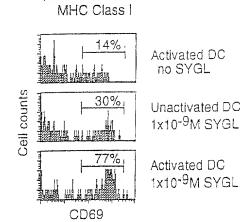
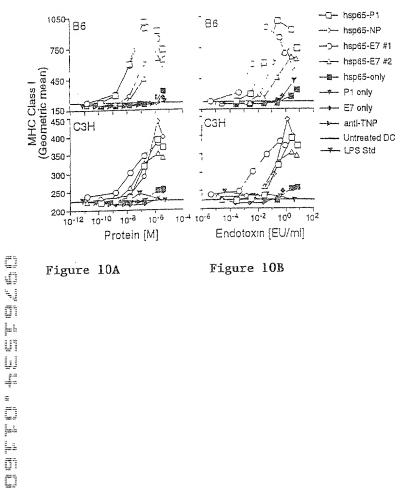


Figure 9C



Inventors: Qian Huang, et al.



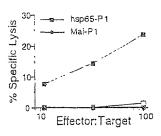


Figure 10C

Figure 10A

Figure 10B

Docket/App No.: 0399.2006-003
"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4² T Cell-Independent"
Inventors: Qian Huang, et al.

TBhsp70 (cDNA) -> Translate . 1-frame

DNA sequence 1979 bp ATGGCTCGTCCG ... AGGCCAAGTGAC linear

ATC CCT COT CCC GTC GGG ATC GAC CTC CCC ACC ACC AAC TCC GTC GTC TCG GTT CTG GAR MARAVGIDLGTTNS vvsv 91/31 GGT GGC GAC CCG GTC CTC CCC AAC TCC GAG GGC TCC AGG ACC ACC CC3 TCA ATT CTC G G D P V V V A N S $\overline{\rm g}$ G S R $\overline{\rm T}$ $\overline{\rm T}$ P S I V 131/51 121/41 SCS TTC GCC CGC AAC GGT GAG GTG GTG GTG GGC GAG GGC AAG AAC CAG GGA GTG ACC A FARMGEVLVGQPAKNQAVT 211/71 181/61 AAC GTC GAT CGC ACC GTG CGC TCG GTC AAU CGA CAC ATG GGC AGC GAC TCG TCC ATA GAG N V D R T V R S 241/81 V K R H M C S D W S I E 271/91 ATT GAG GOC AAG AAA TAC ACC GCG CCG GAG ATC ACC GCC CGC ATT CTG ATG AAG CIU AAG CKKKKAYSEI SARILMKL 331/111 CGC GAC GCC GAG GCC TAC CTC GGT GAG GAC ATT ACC GAC GCG GTT ACC ACC ACC CCC GCC R D A Z A Y L G E D I T D A V I T T P A 391/131 351/121 THE THE AND GHE GEE CAE OFF CHG GOO NOO AND GHE GEE GGE CHG ATO GOO GGE CTU ARE Y F M D A Q R Q A T K D A C Q I A 451/151 4Z1/14I GTG CTG CGG ATC GTC AAC GAG CCG ACC GCG GCC GCG CTG GCC TAC GGC CTC GAC AAG GGC V L R I V N E P T A A A L A Y G L D
481/161 511/171 481/161 GAG 183 GAG CAG CGA ATC CTG GTC TIC GAC TITE SET GGT GGC ACT TTC GAC GIT ICC CTG A T I K B E X E \mathbf{F}^{1} DLOG \bigcirc D 571/191 541/187 CTO GAG ACC GGC GAG GGT GTC GTT GAG GTC CGT GCT ACT ICG CGT CAC AAC CAC CIC GGC LBIGEGVVEVR ат я с в и н с с 631/211 501/201 GGC GAC TGG GAC CAG CUI GTC GTC GAT TGG CTG GTG GAC AAC TTC AAG GGC ACC AGC WDQRVVDWLVDKFKG G D D 661/221 BOC AYO GAY DIG ACO ARG GAC ARG ATT GOG ATT CAG CTG CTG CGG SAA CCC GCC GAG RAG DLTKDKMA M Q R L R E A A E 751/251 345 E I -731/241 ECR ARG RTC GRG CTG RGT TCG RGT CAG TCC ACC TCC RTC RAC CTG CCC TAC RTC ACC GTC A K I E I S S S Q S T S I W I F I I T V ARTELSSEQ 811/271 THE GAC GAC AAS AAC COS ITS ITS TIL GAC CAG CAS UTS ACC CGC GCG GAC TIC CAA CGG D A D K N P L F L D E Q L T R A E F Q R 791/251 ¥71/291 きゅう 人名思力 ATO ACT CAG GAC CTG CTG GAC CGC ACT CGC AAG CCC TTC CAG TCG GTG ATC GCT GAC ACG оргграта 921/311 901/301 GGU AIT TOG GTG TOG GAG ATO GAT CAC GTT GTG CTC GTG GGT GGT TOG ACC CCG ATG CCC v H G SASEID 991/331 961/321 GOG STIG ACC GAT CTG GTC AAG GAA CTC ACC GGC GGC AAG GAA CCC AAG AAG GGC GTC AAC V T D D V K E L \overline{A} \overline{R} \overline{S} G G % ±051,351 A L Q A G V L K G £ V ANA GAC GIT CTG CTG CTT GAI GTT ACC CCG CTG ACC CTG GGT ATC GAG ACC AAG GGC GGG , 5 L G I Ξ < 1111/301 GTG ATG ACC AGG CTC ATC GAG CGC AAC ACC ALG ATC CCC ACC AAG CGG TCG GAG ACT TTC V M T R L I E R N T T I P T R R S E T F 1201/401 12,01/401 ACC ACC GCC GAC GAC AAC CAA COG TCG GTG GAC ATC CAG GTC TAT CAG GGG GAG CGT GAG

Docket/App No.: 0399.2006-003
"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4⁻ T Cell-Independent" Inventors. Qian Huang, et al.

TBhsp70 (cDNA) -> Translate • 1-frame

DNA esquence 1979 bp ATGGCTCGTGCG ... AGGCCAAGTGAC linear

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511/171
SAG AAG CAG CAG ATC CTO GTC ITC GAC TITS GGT GGC ACT TTC GAC GIT TCC CTG
541/191
                                     571/191
CTG GAS ATC 390 BAG GOT GIC GIT GAG GIC CGT GCT ACT TCG CCT GAC AAC CAC CTC GGC
501/201
                                     631/211
GGC GAC GAC TGG GAC CAS CCG CTC GTC GAT TGG CTG GTC GAC AAC TTC AAG GGC ACC AGC
G D D W D Q R V V D W D V D R F X G Y G 691/231
BOO NTO GAT OTO ACO ARG GRO RAG RIG GCG ATG CAG CGG CTC CCC GRA GCC GCC GRO RAG
                                    M Q R
751/251
| S I I
| 721,'241
      DLTKDRMA
                                           RLRBAA
ECA AAG ACC GAG CTG AGT TCG AGT CAG TCC ACC TCC ACC CAC CAC TAC ACC GTC
A K I S L & S & Q S
                                    T S I N
                                                 l P
                                     811/271
791/781
GAC GCC GAC AAG AAC CCG TTG TTC TTA GAC GAG CAG UTG ACC CGC GCG GAG TTC CAA CGG
D A D K N P L F L D E Q L T R A E F Q A
                                    87_/291
541/291
I T Q D L L D R 301/301
                            T R
                                    931/311
COU ATT TOO GTG TOG GAG ATC GAT CAC GTT GTG CTC GTG GGO TCG ACC COA ATC CCC
   I S V S E I D H V
                                    991/331
GOG STG ACT GAT CTG GTC AAG GAA CTC ACC GCC GCC AAG GAA CCC AAC AAG GGC GTC AAG A V T D L V \mathbb R E L T G G \mathbb R \mathbb R P \mathbb R R O V \mathbb R
1021/341
                                    105_/351
CCC CAT CAG GIT GIC GCG GIG GGA GCC GCI CIG CAG GCC GCC GIC AAG GGC GAG GTG
  D E V V A V G A A L Q A G V L K G E V 1/361
1081/361
AAA GAC GTT CTG CTG CCT GAT GTT ACC CCC
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                    D
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Figure 12

Docket/App No.: 0399.2006-003

"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4⁺ T Cell-Independent"

Inventors. Oian Huang, et al.

murine hsp70.1 -> Translate · 1-frame

DNA sequence 1929 bp ATGGCCAAGAAC ... CAGGTGGATTAG linear

```
31/11
ATO GOU AAG AAC ACG GCG ATC GGC ATC GAC CTG GGC ACC TAC TGG TGC GTG GGC GTG
MAXNTAIGIDLGTTYSCVG
THE CAG CAC GGC AAG GTG GAG ATC ATC GCC AAC GAC CAG GGC AAC CGC ACC CCC AGC
61/21
F Q H G K V E I I A N D Q G N R T T
                                151/51
121/41
THE GTG GEC THE ACE GAS ACE CAG COS STO ATE GGG GAS GES GCS AAG AAS CAG GTG GCS
Y V A F T D T E R L I G D A A K N Q V A
                                211/71
181/61
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LNPQNTVFDAKRLIGRKFGD
                                271/91
241/81
GCG GTG GTG CAG TCC GAG ATG AAG CAC TGG CCC TTC CAG GTG GTG AAC GAC GGC GAC AAG
                            w P F Q
                                         v v n D
AVVQSDMK
                                331/111
301/101
COC AAG GTG CAG GTG AAC TAC AAG CGC GAG AGC CGG TCG TTC TTC CCG CAG GAG ATC TCG
P K V Q V N Y K O E S R S F
                                            F
                                391/131
351/121
TOO ATG GTG CTG ACG AAG ATG AAG GAG ATC GCT GAG GCG TAC CTG GGC CAC CCG GTG ACC
S M V L T K M K E I A E A Y L G H P V T
                                451/131
AAC GCG GTG ATC ACG GTG CCC GCC TAC TTC AAC CAC TCT CAC CCC CAG GCC ACC AAG GAC
421/141
N A V I T V P A Y F N D S
                                         Q R Q A
                                511/171
 481/161
GCG GGC GTG ATC GCC GGT CTA AAC GTG CTG CGG ATC ATC AAC GAG CCC ACG GCG GCC GCC
 AGVIAGLNVLRIINE
                                 571 /101
ATC GCC TAC GGG CTC CAC CGG ACC CGC AAG GGC GAG CGC AAC GTG CTC ATC TTC GAC CTG
                            K G E R N V L I F
 I A Y G L D R T G
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 501/201
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                                                        V K
ie e e t f d v s
                                 691/231
 661/221
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 A T A G D T H L G G E D F D N R L
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 721/241
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   V E E F K R K H K K D I S Q N K R A
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 781/261
 CGG CGG CTG CGC ACG GCG TOT GAG ACG GCC AAG ACG ACC CTG TCG ACC AGC ACC CAG GCC
 RRLRTACERAKRTL
                                                         Q A
                                 871/291
 341/281
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         I D S L P E G I D F -Y T S I T R A
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 901/301
CGG TTC GAA-GAG CTG TCC TCG CAC CTG TTC CGC GGC ACG CTG CAG CCC GTG GAG AAC GCC
 R F E E L C S D L F R G T L E P
                                 991/331
 361/321
CTO 080 GAO 800 ANG ATG GAO AAG 900 CAG ATC 0AO GAO 0TG GTG CTG GTG GGC GGC TCG
 LRDAKMDKAQIHDL
                                 1051/351
 1021/341
 ACS CSC ATC CCC AAG GTG CAG AAG CTG CTG CAC GAC TTC TTC AAC GGG CCC GAC CTG AAC
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1081/361
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                                 1171/391
 1141/381
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       DKSEN
                      V
                          Q
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                                 1291/431
 1251/421
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Docket/App No.: 0399.2006-003
"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4+T Cell-Independent"
Inventors: Qian Huang, et al

murine hsp/v.1 -> transfate . I-frame

		1/44									51/451									
	CAG	GTG'	TAC	GAC	ĞĞC	GAC	AGG	GCC	MTG	ACG	CGC	GAC	A&C	Σ 5 F_{a}	CTG	CTG	GGG	COC	TTC	GAG
	O	V	Y	3	G	E	R	A	M	T	R	D	N	N	L	L	G	Ħ	F	E
	1381/461								1411/471											
	C'fG	AGC	GGC	ATC	CCG	CCG	GCG	CCC	\mathtt{PGG}	$\mathbb{G}\mathbb{G}\mathbb{C}$	CTC	CCC	CAG	ATC	GAG	OTO	ACC	TTC	CVC	ATC
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	GAC	GCC	,A,Z,C	GGC	ATC	CIG	AAC	GTC	ACG	GCC	ACC	$\mathbb{C}\mathbb{A}\mathbb{C}$	AAG	AGC	ACC	GGC	AAC	CCC	AAC	AAG
	D .	A	N	G	I	L	Ŋ	V	T_{i}	A	T	\mathcal{D}	Σζ	Ş	יני	G	ĸ	Ą	M	ĸ
	1501/501							*				1/57								
	ATC	ACC	APC	ACC	AAC	CAC	AAG	GCC	CGC	OTG	AOC	AAG	GAG	GΛO	ATC	OAG	000	ATG	OTO	CAG
	Ţ	T.	I	J,	N	D	ĸ	G	R	Ľ	S	70	\mathbf{F}_{t}	\mathbf{E}	Ţ	H	R	M	∇	Ω
	1.56	1/52	1		1591/531															
W. 1851.	GAG	GCC	GAG	CCC	TAC	ΔAC	GCC	CAG	GAC	CAG	GCG	CAG	CGC	GAC	AGG	GTG	GCC	GCC	AAC	ΛAC
	8	Z 1.	E	H	Y	K	y	E	D	E	Λ	Q	R	D	\aleph	V	25.	Λ	P.	N
	1.62.	1651/531 3 CTC GAO TCC TAT GCC TYC AMO ATG AMG MOC GCC GTG GAG GAC GAG GCF C																		
	GCG	CTC	GAC	TCC	$T \wedge T$	GCC	TTC	AAC	ATG	AAG	ACC	GCC	GTG	CAG	GAC	CAG	GCT	CTC	AAG	GGC
				S	T.	A	ਲ	N	М	\mathcal{F}_{k}	S	A	V	\mathbb{E}	D	\mathbf{F}	C	T,	ĸ	G
	1,68	ル 1/56	1		1711/571															
J	AAG	\mathtt{CTC}	ÆGC	GAG	\mathbb{GCT}	GAC	$\mathcal{A}_{\mathcal{A}}C$,AAG	-9.AG	GTC	CIC	GAC	$A \ge G$	TGC	CaNd	GAG	arc	ATC	TOO	TGG
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4 575	.174	1/58	j.		1771/591															
na Mari	CTG	CAC	TCC	AAC	VCO	CTG	GCC	GAC	PAG	G3G	CAG	TTC	GTG	$C\mathcal{F}C$	AAG	CGG	GVG	GAG	G_iU_i	GAG
	L	I)	S	M	2,	L	'g'	D	K	E	ři.	F,	V.	Ħ	ĸ	R	E	追	Γ,	B
		1/60			1831/611 CCC ATC MTC AGT GGG CTG TAC CAG GGT GCG CGT GCC CCT															
	CGG	GTG	TGC	ACC	CCC	ATC	MC	AGT'	GGG	CTG	TAC	CAG	GGT	GÇG	CGT	C_iC_i	CCT	GGG		
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77	1993	1./62	1									1/63								
i.	GGC	TTC	GCĞ	000	CAC	GCG			7/17	CGA	GC'C'	TCT	CGC		CCA	COC	ACC	ATC	GAO	GAG
	G	Σ_{i}	-	A,	Q	Ϋ́	P	Р	K	G	Λ	5	C)	5	Œ	Þ	ηŢ	Į	F^1	E
		1/54																		
m	GTG	$G\!\!AT$	TAG																	
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Figure 13B

1.

Docket/App No.: 0399.2006-003
"In Vivo CTL Elicitation by Heat Shock Protein Fusion Proteins Maps to a Discrete Domain and is CD4" T Cell-Independent"

Inventors: Qian Huang, et al.

murine hsp70.1 -> Translate • 1-frame

DNA sequence 1929 bp ATGGCCAAGAAC ... GAGGTGGATTAG linear

```
571/197
                           AAG GGC GAG CGC AAC GTG CTC ATC TTC GAC CTG
                           K G E R N V L I F D L
                              531/311
GGG GGC GGC ACG TTC GAC GTG TCC ATC CTG ACG ATC GAC GAC GGC ATC TTC GAG GTG AAG
6C1/201
G G G T F D V S I L T I D D G I F E V 8
                               691/231
661/221
SCC ACG GGG GGC GAC ACG CAC CTG GGA GGG GAC GAC TIC CAC AAC CGG CTG GTG ACC CAC
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721/241
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781/261
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R L R T A C E R A K R T L S S S T
                                                      Q A
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341/281
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S L B I D S L F B G I D F Y T S I T R A
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901/301
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R F E E L C S D L F R G T L E P V E K A
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951/321
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[_021/341
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081/361
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Z S I N P D E A V A Y G X A V Q A A I
                               1171/391
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1141/381
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